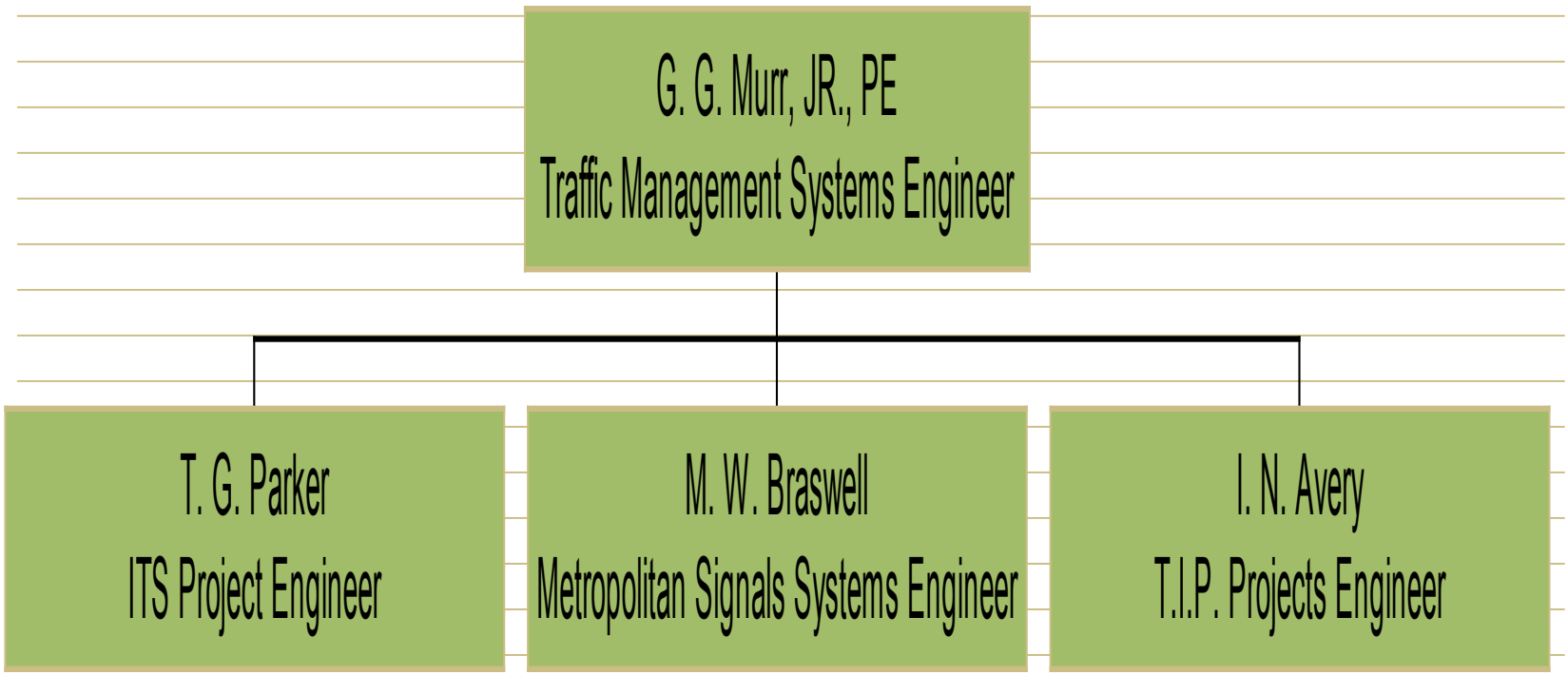
TRAFFIC ENGINEERING CONFERENCE FOR OPERATIONS & SAFETY September 8-10, 2004 in Asheville

TOPIC

UTILITY MAKE-READY PLANS

UTILITIES

Traffic Management Systems (Organizational Overview)



TRAFFIC MANAGEMENT SYSTEMS MAIN DUTIES

- **Design and implement Intelligent Transportation Systems (ITS) Technologies**
- **Design and implement traffic operations centers and real-time communications networks for Metropolitan Computerized Signal Systems**
- **Design and implement real-time communication networks for stand alone Closed Loop Signal Systems**

OTHER TRAFFIC MANAGEMENT SYSTEMS RESPONSIBILITIES

- **Development of Utility Make Ready Plans**
- **Development of Construction Plans, Project Special Provisions, and Engineering Estimates**
- **Construction Engineering Support**

UTILITY MAKE READY PLANS

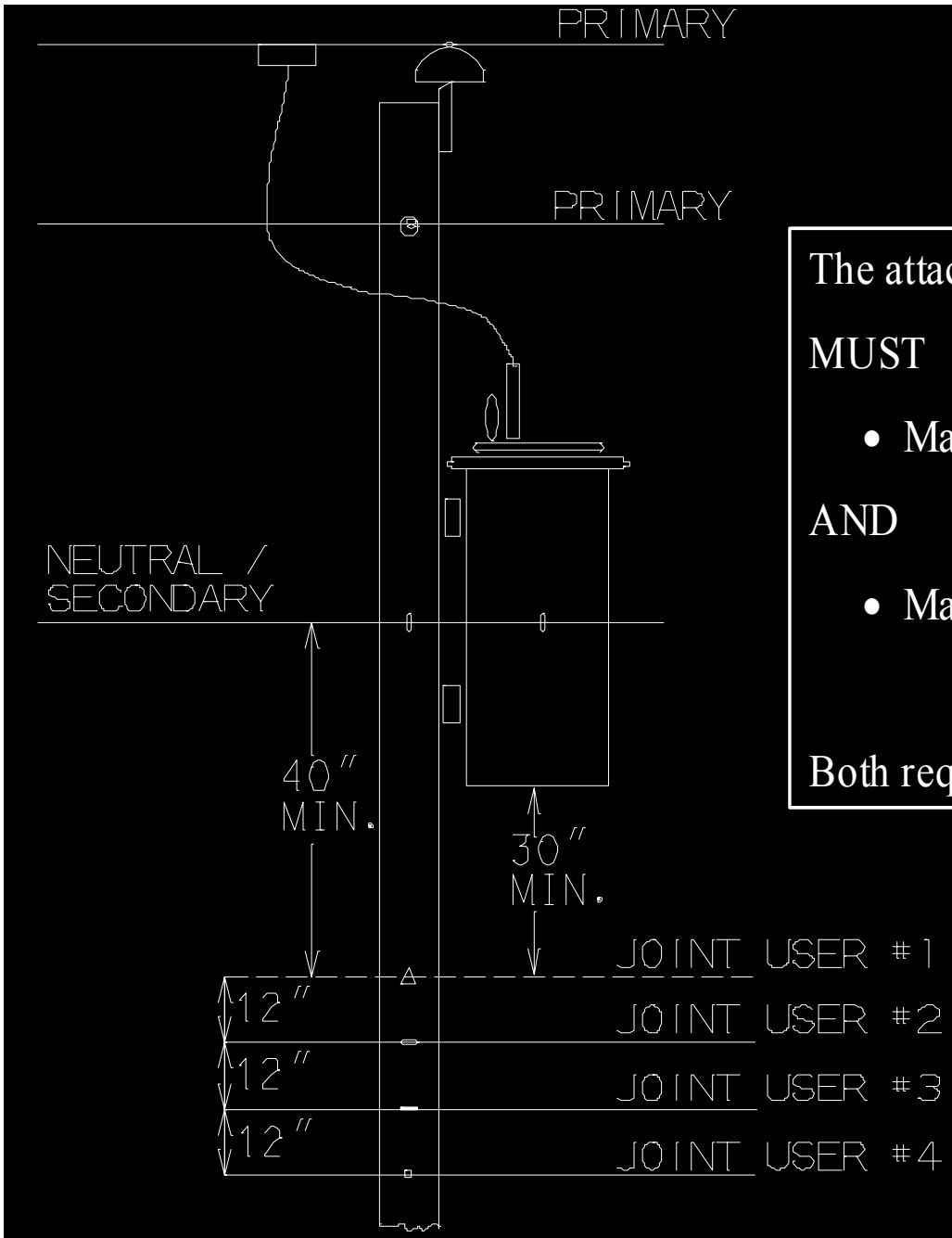
- What are Utility Make Ready Plans and what information do they provide?
  - **They are plans that identify existing and potential utility conflicts that would result from the installation of a NCDOT communications cable. The plans also identify any utility adjustments that the utility company needs to make prior to the NCDOT's cable being installed.**
  - **Final plans are developed from field meetings with representatives from the various utility companies.**

UMR FIELD REVIEWS

- **Walk the project to obtain preliminary field information.**
- **Transfer field data to CADD**
- **Meet with Utility Representatives**
- **Prepare Final Utility Make Ready plans**

National Electrical Safety Code

- **The National Electrical Safety Code (NESC) is a standards document.**
- **This standard covers provisions for safeguarding of persons from hazards arising from the installation, operation, or maintenance of 1) conductors and equipment in electric supply station, and 2) overhead and underground electric supply and communication lines. It also includes work rules for the construction, maintenance, and operation of electric supply and communication lines and equipment.**



The attachment point for Joint User #1

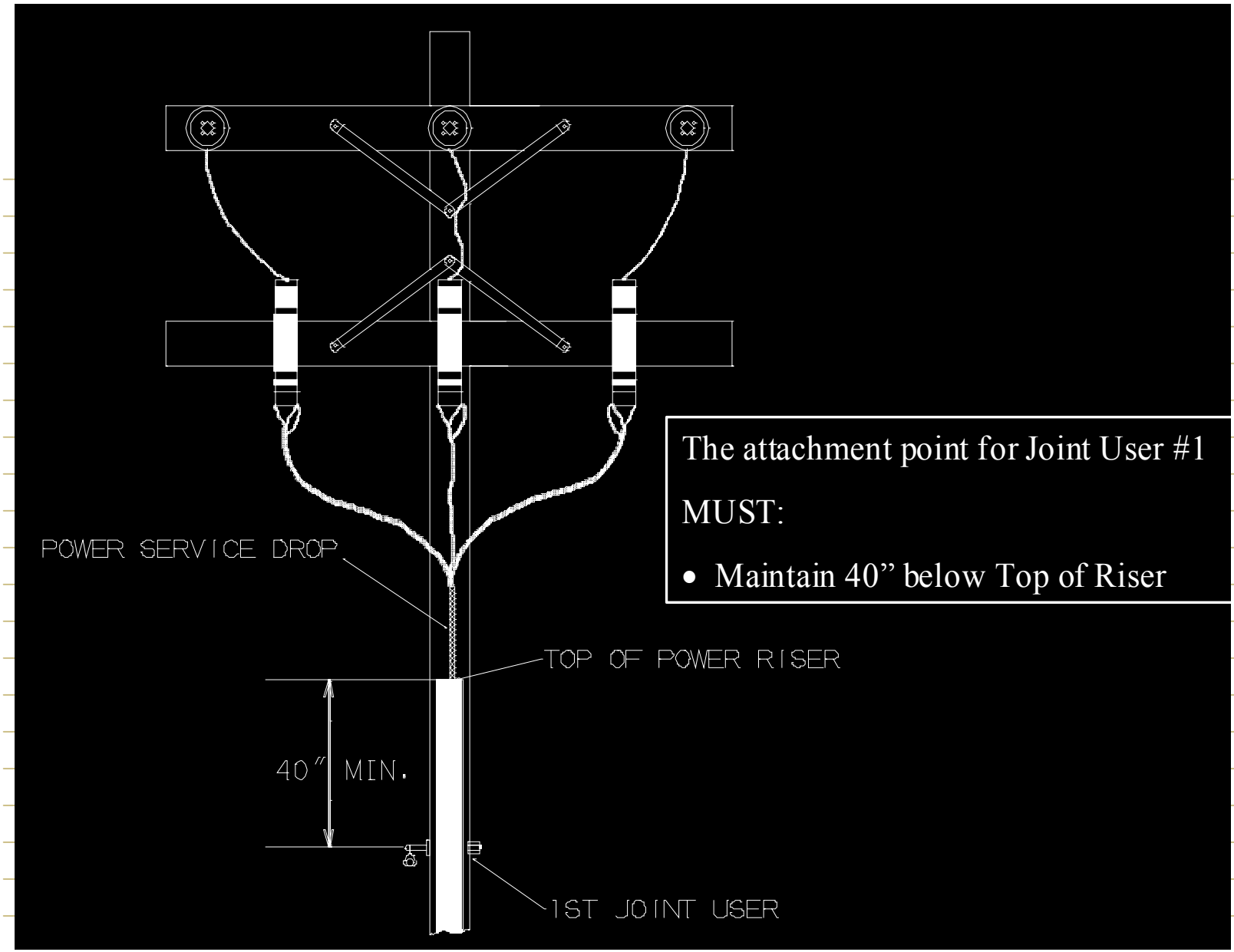
MUST

- Maintain 40” below Power

AND

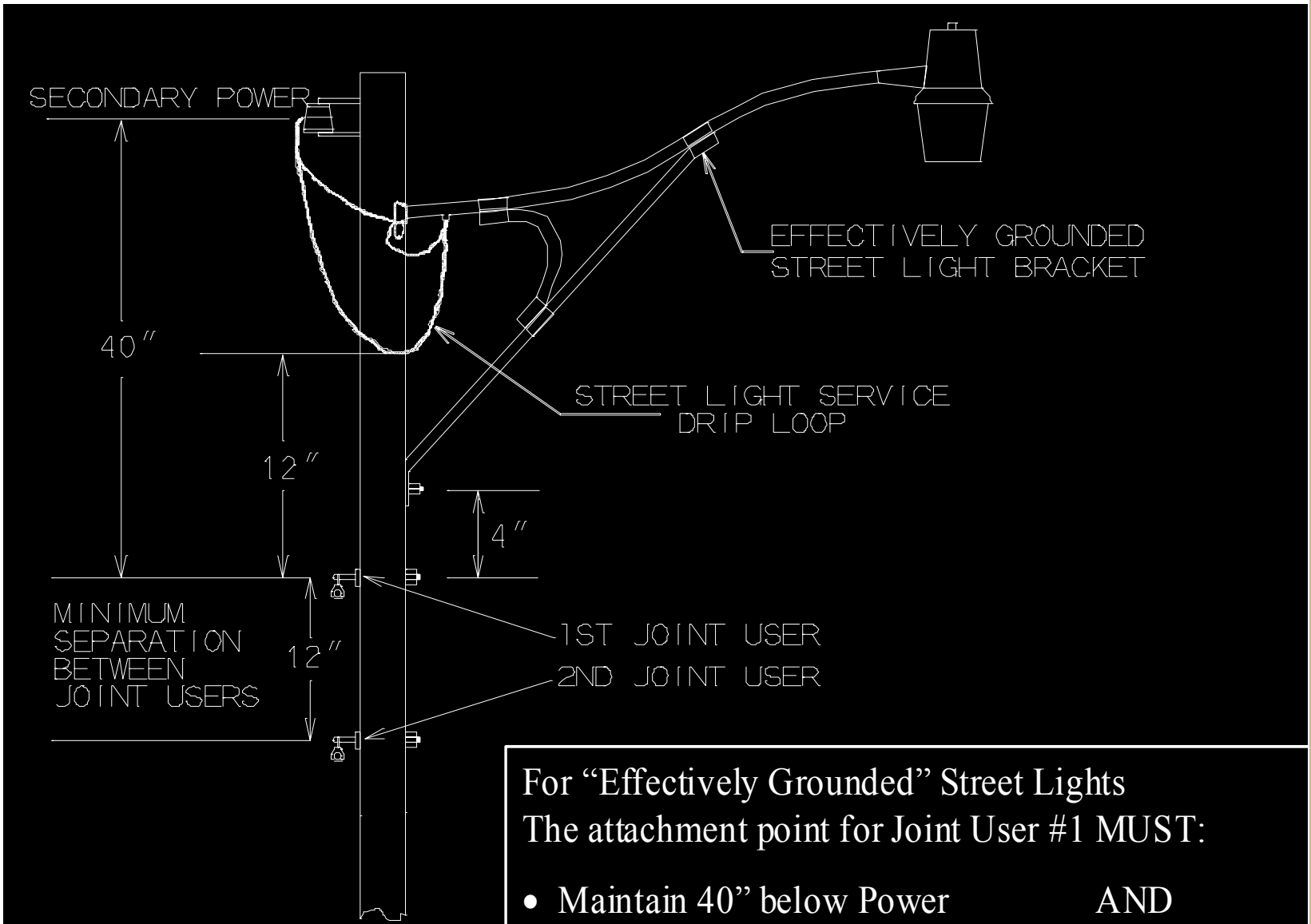
- Maintain 30” below Transformer

Both requirements must be satisfied



The attachment point for Joint User #1 MUST:

- Maintain 40” below Top of Riser



For "Effectively Grounded" Street Lights
The attachment point for Joint User #1 MUST:

- Maintain 40" below Power AND
- Maintain 12" below Drip Loop AND
- Maintain 4" below bottom of Street Light Bracket

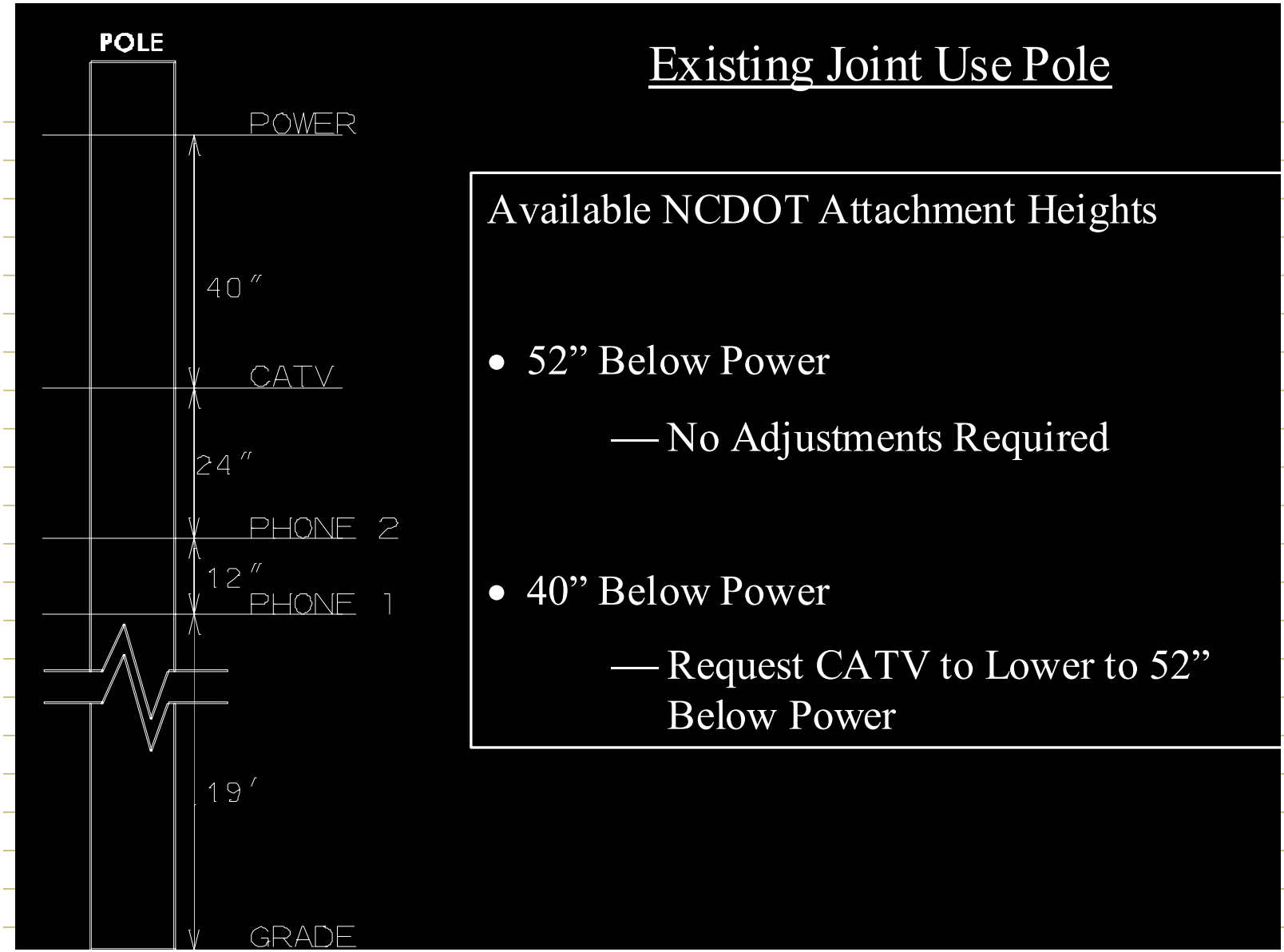
SUMMARY

NCDOT MINIMUM ATTACHMENT CLEARANCES FROM OTHER JOINT USERS AT THE POLE

CLEARANCE FROM	MIN. DISTANCE
NEUTRAL / SECONDARY	40"
POWER SERVICE DROP	40"
POWER SERVICE DRIP LOOP[1]	40"
TOP OF POWER RISER	40"
BOTTOM OF TRANSFORMER	30"
COMMUNICATIONS CABLE	12"

1. IF THE POWER SERVICE DRIP LOOP SUPPLIES POWER TO AN EFFECTIVELY GROUNDED STREETLIGHT THE MINIMUM CLEARANCE REQUIREMENT IS REDUCED TO 12"

EXAMPLE



Existing Joint Use Pole

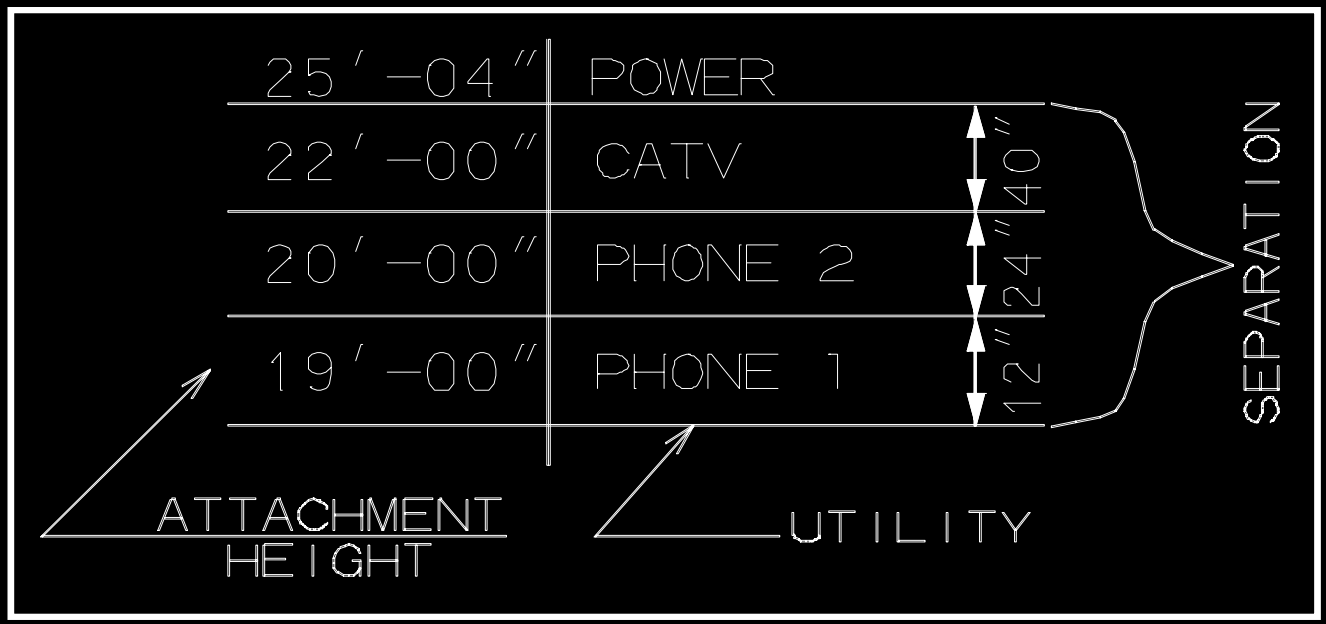
Available NCDOT Attachment Heights

- 52” Below Power
  - — No Adjustments Required
- 40” Below Power
  - — Request CATV to Lower to 52” Below Power

EXAMPLE

"UTILITY TREES"

- Included on Utility Make Ready Plans
- Coupled with Adjustment Notes
- Illustrate
  - — Existing Utilities
  - — Existing Attachment Heights
  - — Existing Vertical Clearances



DEVELOPER PROJECTS

A letter dated March 4, 2004, was sent to all Division and Regional Traffic Engineers requesting that on all future agreements made between Developers and the NCDOT, that the Developer be made responsible for developing Utility Make Ready Plans in conjunction with the proposed Cable Routing Plans.

DEVELOPER PROJECTS

- **On some projects our Section had to prepare the UMR plans and meet with the Utility Representatives which may have resulted in project delays.**

- **Some plans would leave the communications media attachment location to the discretion of the Contractor.**

- **Our intent is to have the attachment location identified for the Contractor and to eliminate any violations that could occur with regards to NESC rules. The Developer (or firm contracted by the Developer) will now be responsible for all work associated with the UMR development process and not the Contractor.**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 10, 2004

MEMORANDUM

TO: Division Traffic Engineers
Regional Traffic Engineers

FROM: G. G. Murr, Jr., PE
Traffic Management Systems Engineer

SUBJECT: Utility Make-Ready Plans for Developer Traffic Signal System Projects

We have recently learned that in the agreements between NCDOT and Developers where traffic signal system communications are to be installed, NCDOT does not currently require the Developer to prepare the Utility Make-Ready (UMR) Plans or perform the UMR walk-throughs. Currently, on Developer-initiated traffic signal system installations, the Developer prepares communications cable routing plans for Traffic Engineering review. Traffic Engineering prepares the UMR Plans and performs UMR walk-throughs. In accordance with the National Electrical Safety Code (NESC), the UMR Plans provide for a safe and viable communications network installation path. Requiring NCDOT to prepare UMR Plans and perform subsequent walk-throughs may have a negative impact on the completion schedule of the communications cable routing plans. The development of the UMR Plans are an essential part of the total project plan development and should be treated the same as the other aspects of the project design included in the agreement.

The purpose of this memorandum is to request that on future agreements with Developers, verbiage be added to require the Developer to prepare the UMR Plans for the proposed installation of the communications medium. Traffic Engineering will review UMR plan development the same as other aspects of the plan. The UMR Plans need to address, as a minimum, intended pole attachment points for the proposed communications medium as well as identification of any make-ready work required by the existing utilities. In addition, we request that the Developer (or firm contracted by the Developer) be responsible for the UMR walk-throughs, working out details associated with the UMR work, and ensuring utility adjustments/relocations are completed. The Developer needs to bear all expenses associated with utility make-ready work. If the Division elects to do so, they may inspect the utility adjustments/relocations before allowing communications cable installation work to begin.

Please consider this request and let me know if you need any clarification. Call me at 919-733-5574 or email at gmurr@dot.state.nc.us.

CC: W. F. Rosser, PE — Division Engineers
G. A. Fuller, PE — A. D. Wyatt, PE, PTOE

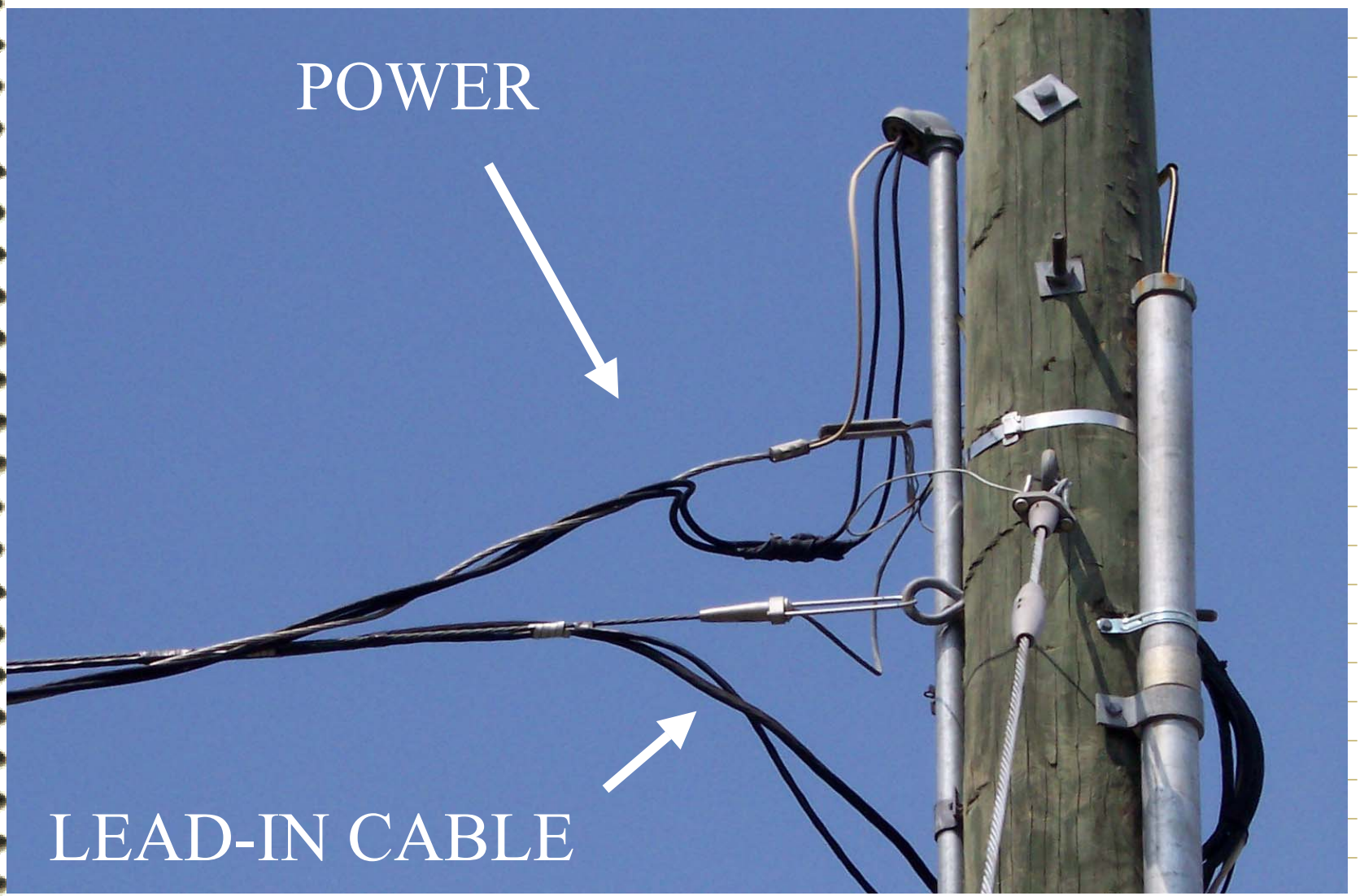
MAILING ADDRESS:
TRAFFIC ENGINEERING AND SAFETY SYSTEMS BRANCH
1552 MAIL SERVICE CENTER

TELEPHONE: 919-733-8021
FAX: 919-715-0955

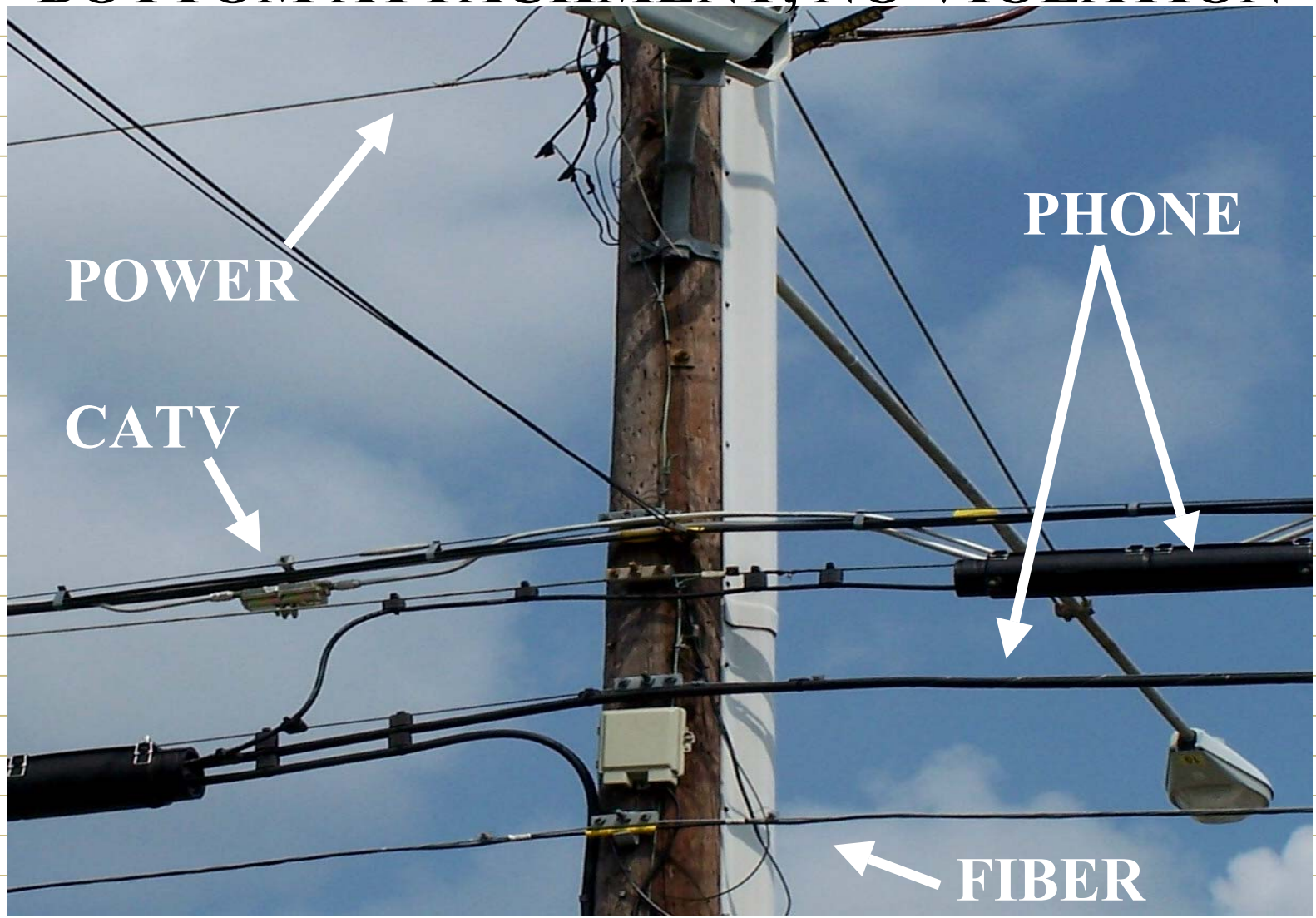
LOCATION:
210 EAST PEACE STREET
RALEIGH NC 27604

VIOLATION!!! F.O. CABLE AND SIGNAL CABLE ABOVE THE POWER!!! SHOULD BE 40 INCHES BELOW.

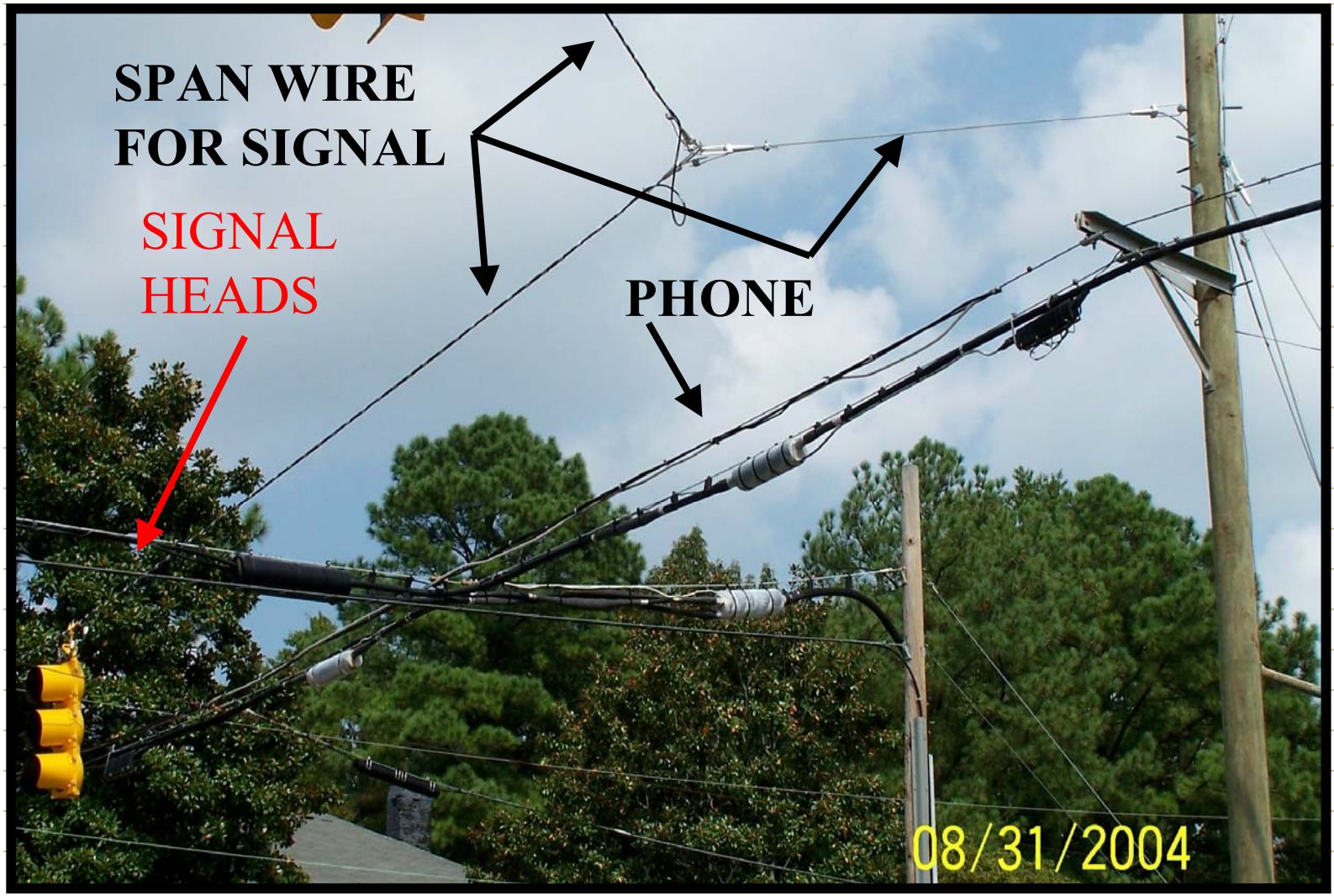
VIOLATION WITH POWER



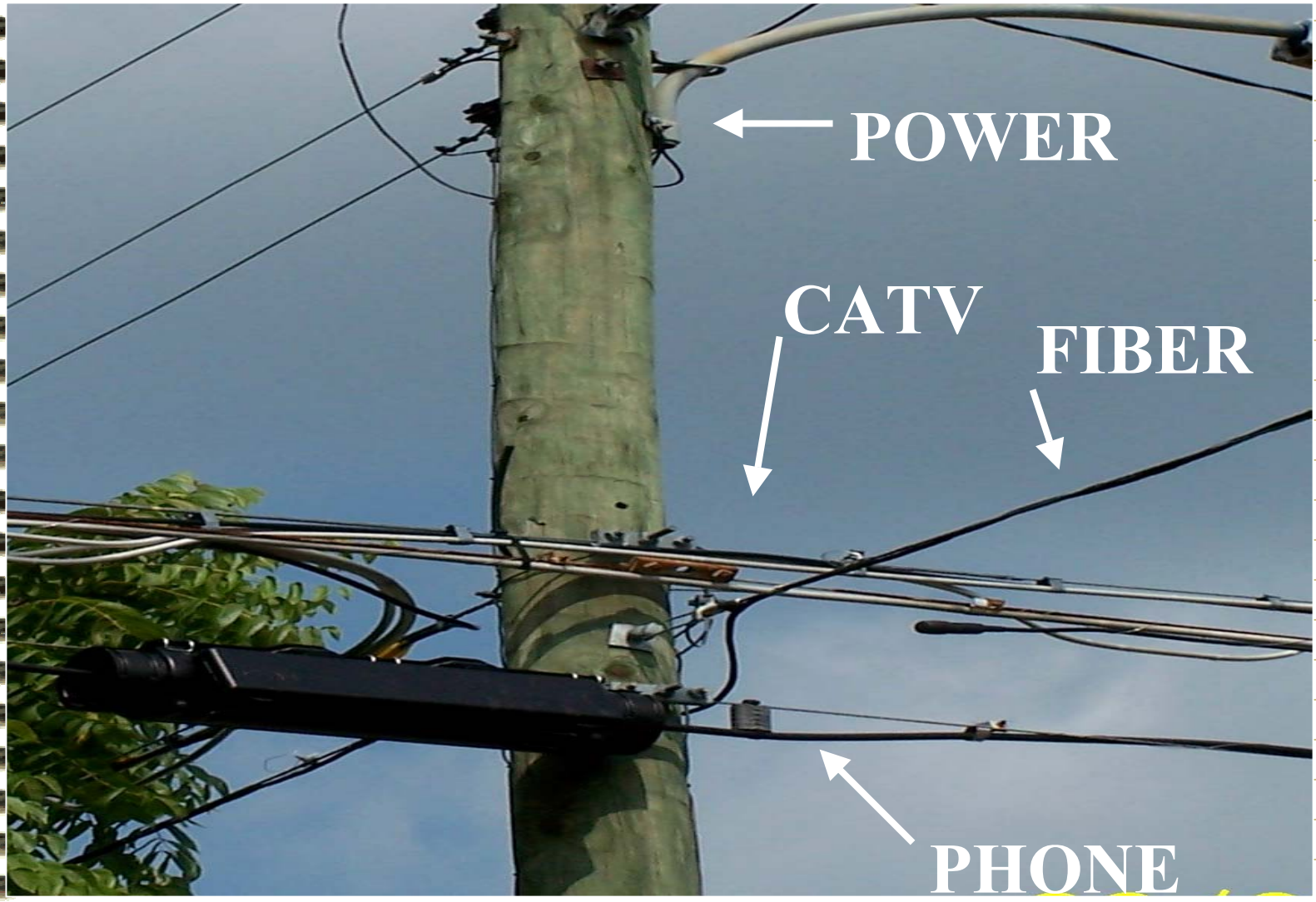
NCDOT FIBER OPTIC CABLE IS THE BOTTOM ATTACHMENT, NO VIOLATION



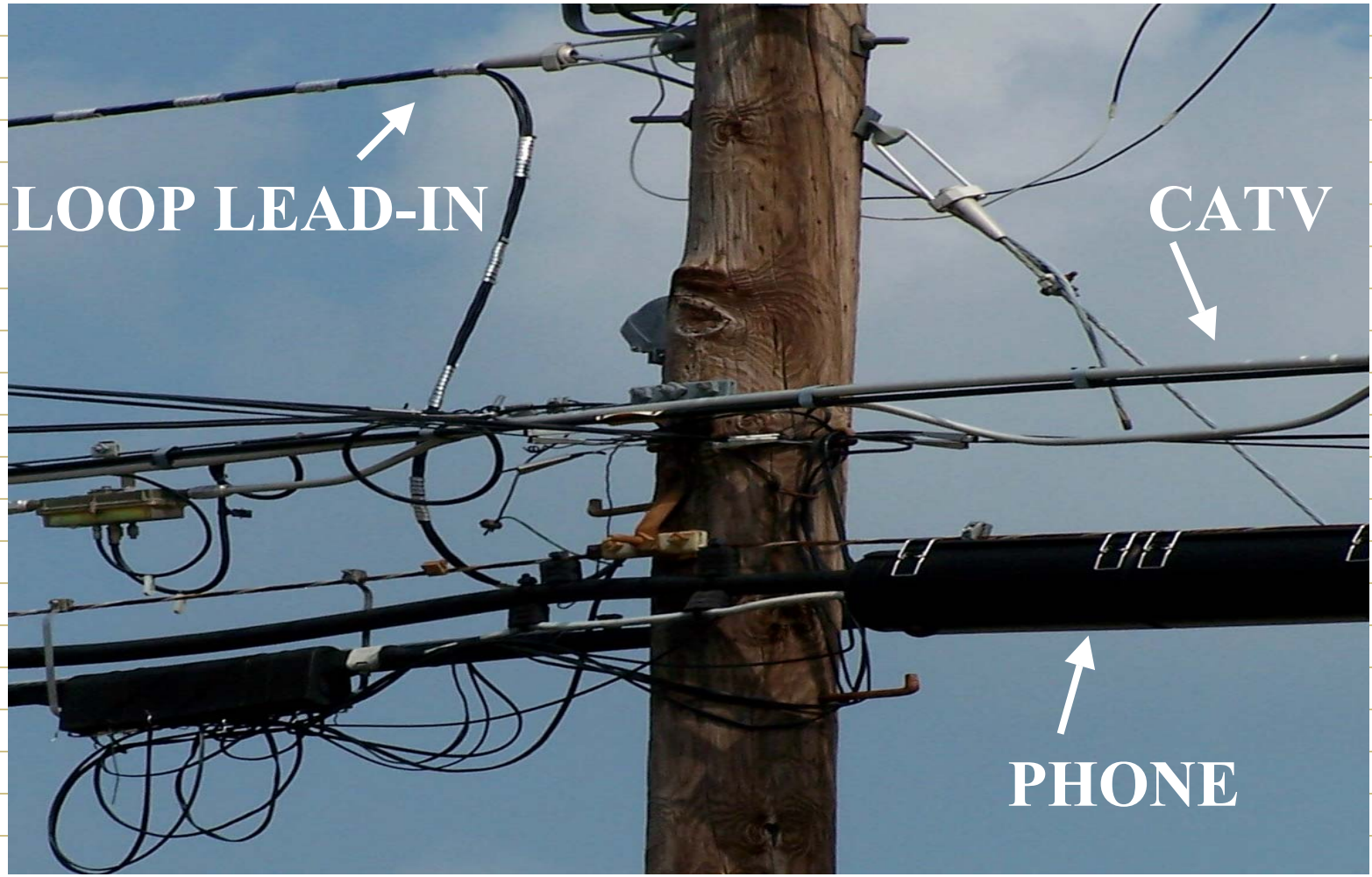
NOTICE THE SPAN WIRE ARRANGEMENT. THE SIGNAL HEADS/DISPLAYS HAVE BEEN MOVED OUT IN FRONT OF THE PHONE LINES.



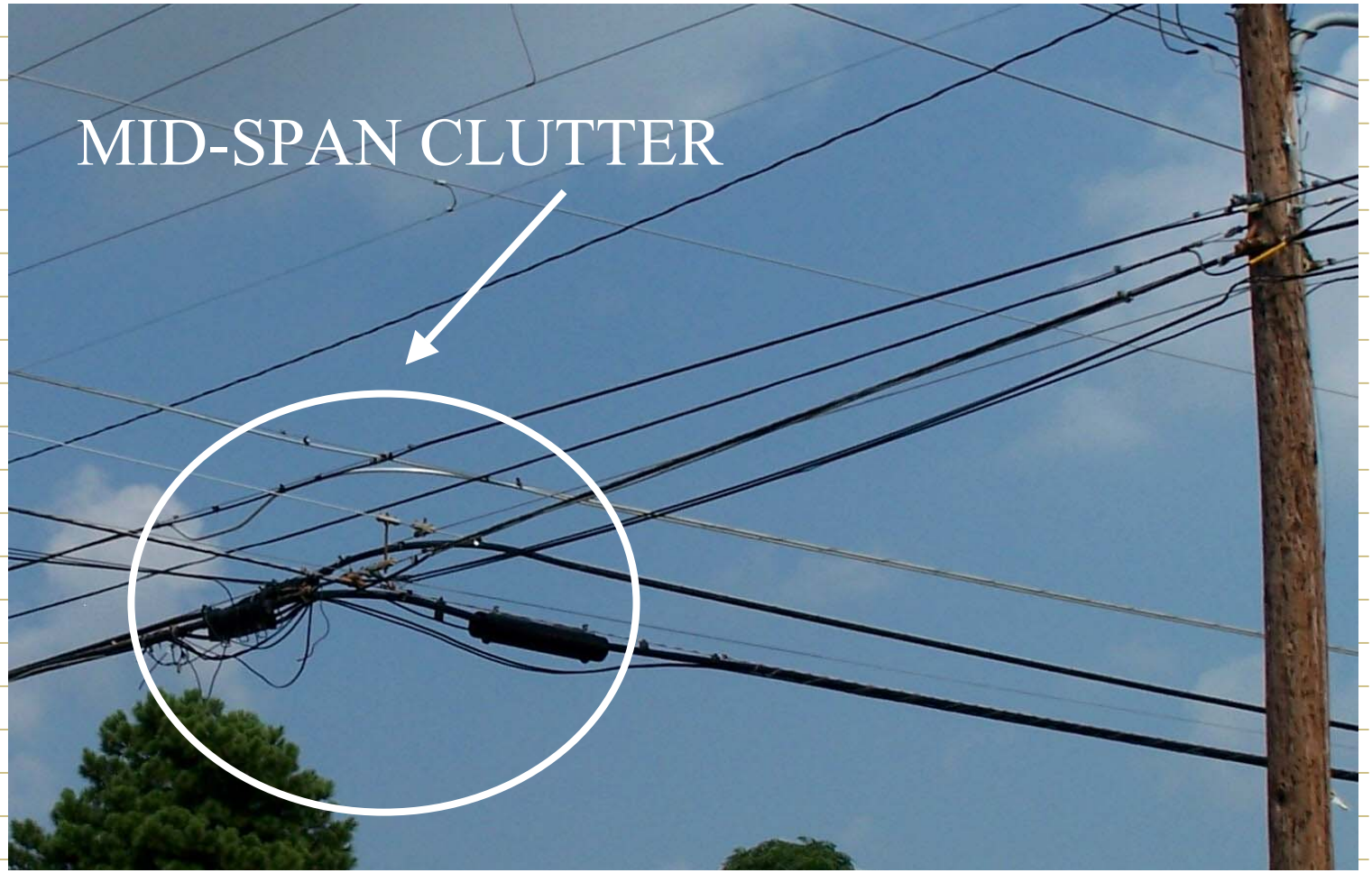
AT THIS LOCATION WE ASKED CATV TO RAISE THEIR CABLE, OBVIOUSLY THEY DID NOT!



AT THIS PARTICULAR LOCATION OUR FIBER OPTIC CABLE WOULD HAVE ATTACHED AT THE BOTTOM. THE PROBLEM WAS THAT WE WOULD ONLY BE ABOUT 16 FT ABOVE GRADE. WE CHOSE ANOTHER ROUTE.

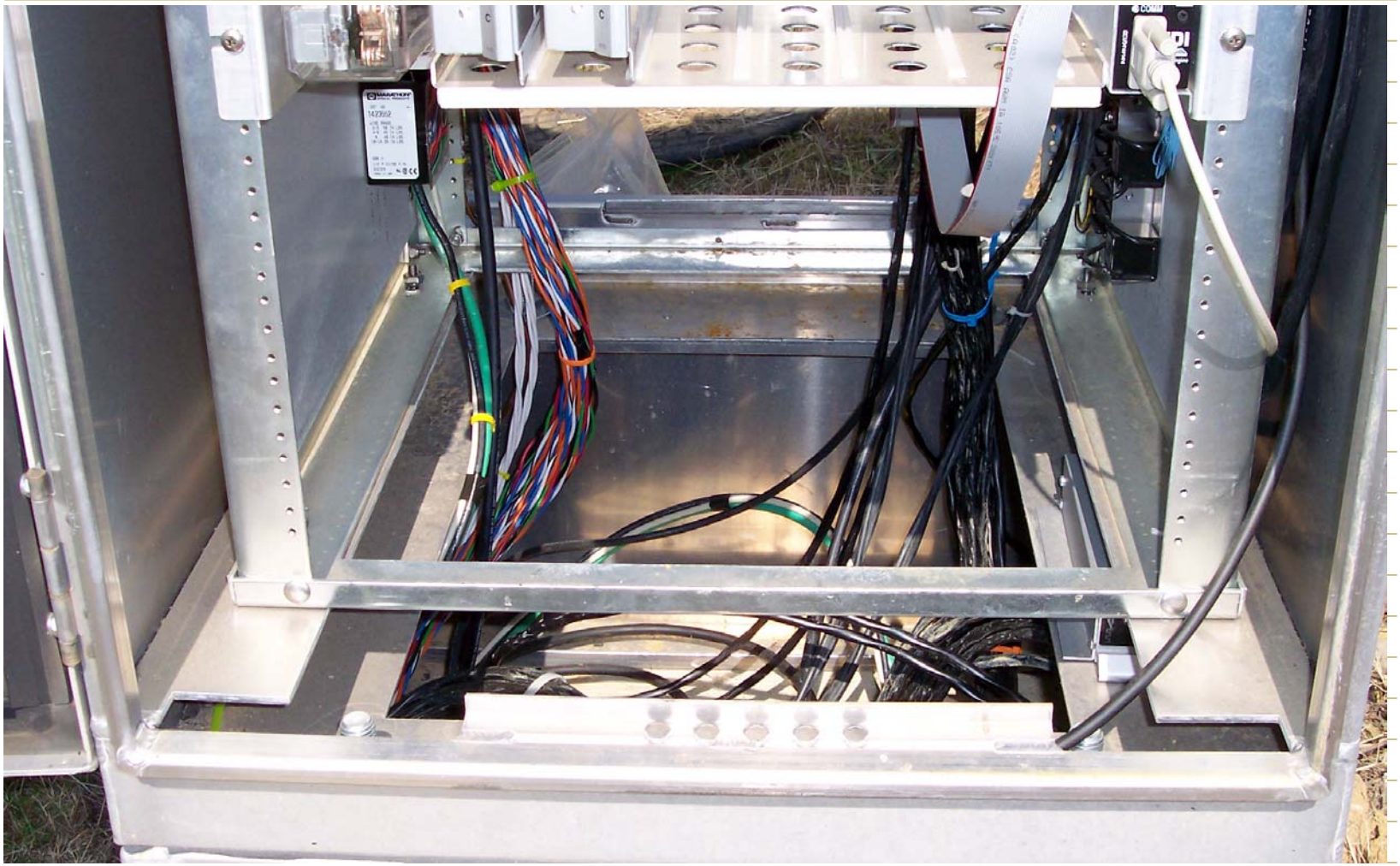


SOMETIMES YOU HAVE TO BE CONCERNED ABOUT THE MID-SPAN CROSSING MORE THAN THE ATTACHMENT AT THE POLE.

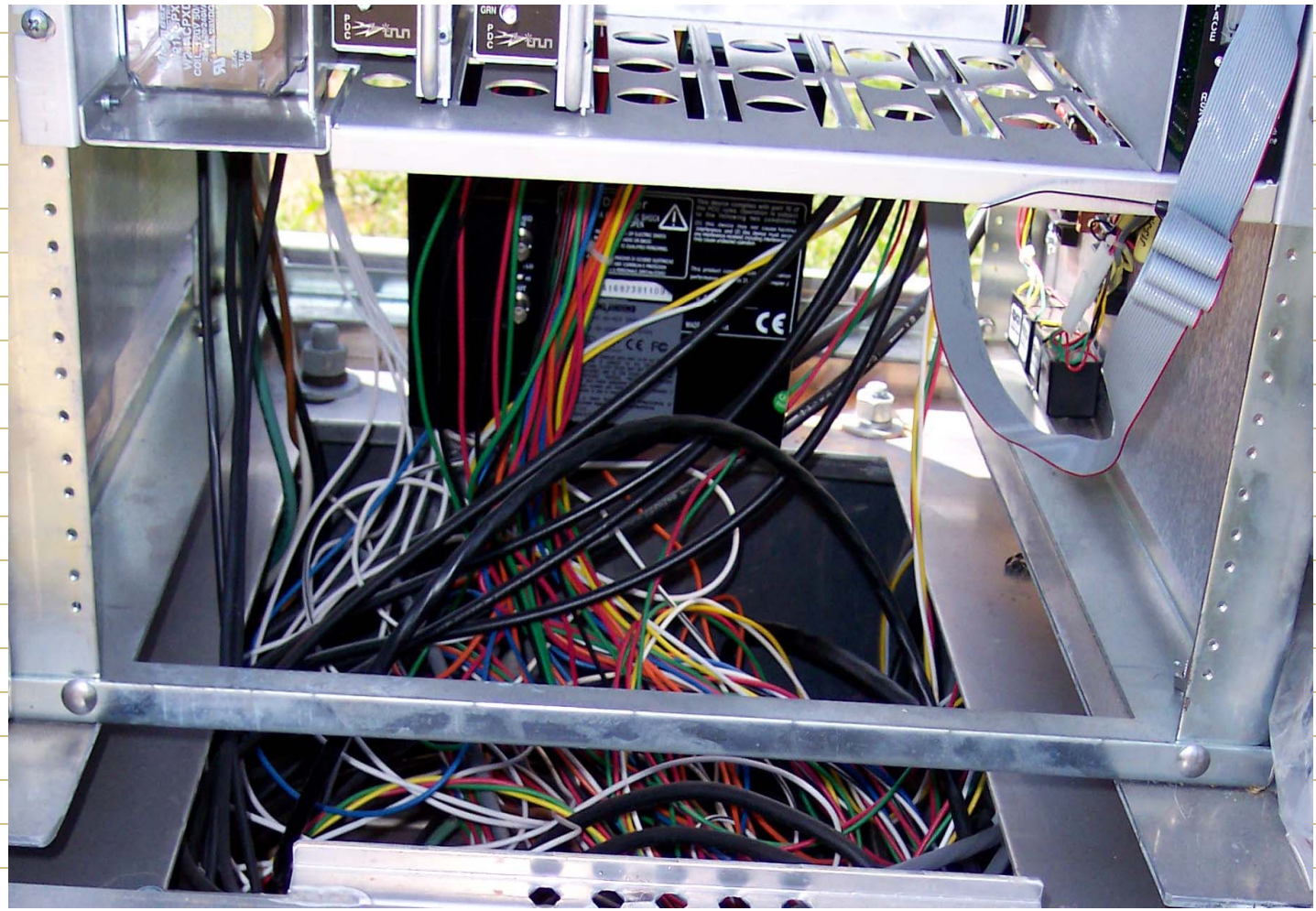


CAN YOU IDENTIFY THE KNOT???

WHAT TO DO!!!!



WHAT NOT TO DO!!!



NCDOT DOWN GUY TEST PILOT PROGRAM

ANOTHER METHOD OF SUPPORTING POLES!!!